

CORRESPONDENCE CONTROL
INCOMING LETTER NO.

4522 RF 94

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SBY, W.S.		
BNIVAL, G.J.		
RDONA, R.C.		
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NN, T.M.		
RRERA, D.W.		
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LTON, D.L.		
IS, J.A.		
OVER, W.S.		
LAN, P.M.		
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ALY, T.J.		
DAHL, T.G.		
BIG, J.G.		
LOWELL, L.J.	X	X
ITCHINS, N.M.		
CKSON, D.T.		
LL, R.E.		
JESTER, A.W.		
ARX, G.E.		
CART, D.		
DONALD, M.M.		
GOVERN, L.J.		
KENNA, F.G.		
UKERT, J.G.		
ZZUTO, V.M.		
OTTER, G.L.		
ATTERWHITE, D.G.		
HRADER, D.C.		
HUBERT, A.L.		
HWARTZ, J.K.		
ETLOCK, G.H.		
TIGER, S.G.		
DORHEIS, G.M.		
BICHER, C.	X	X

CORRESPONDENCE CONTROL X X
DMN RECORD/080 X X
ATS/T130G

Reviewed for Addressee
Corres. Control RFP

12-19-94
DATE BY

Ref Ltr. #

DOE ORDER # 5400.1

RF-46522 (Rev.9/94)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

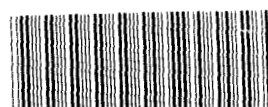
REGION VIII

999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

DEC 19 1 39 PM '94

EC&C
ROCKY FLATS PLANT
CORRESPONDENCE CONTROL

DEC 15 1994



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Ref: 8HWM-FF

Mr. Steven Slaten
U.S. Department of Energy
Rocky Flats Office
P.O. Box 928
Golden, CO 80402-0928

Re: Operable Unit 5, Technical
Memorandum 11, Chemicals of
Concern

Dear Mr. Slaten:

EPA reviewed the draft final version of the above referenced document. We found that the comparison of Operable Unit 5 (OU 5) data to background concentrations needs to be performed again due to the following mistakes and omissions:

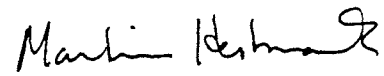
1. A preliminary exploratory data appraisal consisting of box plots, histograms, probability plots, ordered listings, and/or other graphics was omitted. This is an essential component of the background comparison methodology accepted by all three parties to the Interagency Agreement on November 18, 1993.
2. Professional judgement in interpreting the results of the statistical comparisons of OU 5 data to background was inappropriately applied at the end of the chemicals of concern selection process. The consideration of spatial and temporal distributions as well as pattern recognition concepts should be part of the first step in the process, the background comparison. The application of professional judgement at the end of the selection process is very limited and is not used to further eliminate contaminants but rather it is used to reevaluate contaminants that were eliminated based on other selection criteria.

We believe that the best course of action is to perform the background comparison again, get agreement between all three parties on the outcome of this comparison, continue the selection process, and re-submit Technical Memorandum 11 for review and approval. EPA's other specific comments are enclosed and should be incorporated into the re-submittal.



Please work with our point of contact on OU 5, Bonnie Lavelle, to resolve these comments. She can be reached at (303)294-1067.

Sincerely,



Martin Hestmark, Manager
Rocky Flats Project

Enclosure

cc: Joe Schieffelin, CDPHE
Kurt Muenchow, DOE
Carol Bicher, EG&G

EPA COMMENTS ON TECHNICAL MEMORANDUM 11, OPERABLE UNIT 5
CHEMICALS OF CONCERN

1. Page 2-1, Section 2.1: This section should include summary tables of descriptive statistics for all data used to select COCs. The summary tables should include the range of reporting limits, frequency of detection, minimum non-detect value, maximum non-detect value, minimum and maximum detected values, mean concentrations and upper 95 percent confidence limit concentrations. This information is needed to evaluate detection limits and assess the range of detected values to determine if the data adequately characterize the site.
2. Page 2-7, Table 2-1: The inhalation cancer slope factor (CSF) for arsenic is incorrect. The correct value is 50 (milligrams per kilogram-day)⁻¹ because the CSF was derived assuming a 30 percent bioavailability via lung tissue. A memorandum explaining the conversion of unit risk to CSF for arsenic is enclosed with this review. The value of 50 should be used in the concentration toxicity screen (CTS) for soil and sediment.
3. Page 2-12, Second Paragraph: This paragraph states that only the oral noncarcinogenic toxicity value for nickel was used in the CTS for ground water and that nickel was not considered a carcinogen. Nickel is classified as a known human carcinogen (class A). For this screening analysis, the most conservative toxicity value should be used according to EPA's Risk Assessment for Superfund, Part A. Nickel should be evaluated as a carcinogen.
4. Page 2-12, Third Paragraph: This paragraph explains how potential COCs without toxicity values will be evaluated. The text should clearly state that these chemicals will be retained as COCs and evaluated qualitatively in the baseline risk assessment. The CTS results for each medium indicate that chemicals without toxicity values are not COCs. This is incorrect. The lack of an EPA approved toxicity value does not indicate that a chemical is nontoxic. Any chemical without a toxicity value should be retained as a COC and qualitatively evaluated in the baseline risk assessment. These chemicals should be added to the COC list.
5. Appendix A, Page A-1, Section A.1: The text should explain how "U" qualified data were evaluated for each medium and for the background data. It should also describe how the blank data were used. The "10 times" and "5 times" rules should have been used to determine whether chemicals detected in both site and blank samples are attributable to blank contamination.

Ref: 8HWM-SM

MEMO

SUBJECT: Inhalation slope factor for Arsenic

The CSF for arsenic inhalation is the Geometric mean of risk estimates derived from several epi studies of lung cancer incidence in workers at smelter operations in Anaconda, MT and at ASARCO facilities in Tacoma, WA. The CSF was derived assuming a 30% bioavailability via the lung and the appropriate value is 50 (mg/kg/day). As a result, when estimating risk from total ambient air concentrations, the inhaled dose should be multiplied by 0.3 to derive the absorbed dose. The unit risk value $4.29E-3/\text{ug}/\text{M}^3$ is correct and may be compared to measured air concentrations without any adjustment for bioavailability. This may be demonstrated as follows:

Unit risk (risk per ug/m^3) =

(slope factor X 0.3) X (1/70 years) X (20 m^3/day) X (10^{-3} mg/ug)

= (50 X 0.3) X 1/70 X 20 X 10^{-3}

= $4.29E-3$ = unit risk for arsenic inhalation

If you should have any further questions regarding this matter please call me at 294-7655.